

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in the application:

1 1. (Original) A proximity detector, comprising:

2 a magnetic-field-to-voltage transducer for providing a magnetic field signal indicative of  
3 an ambient magnetic field;

4 a peak detector responsive to said magnetic field signal for providing a tracking signal  
5 which substantially follows at least a portion of said magnetic field signal, wherein said peak  
6 detector comprises:

7 a first digital-to-analog converter for providing a first output signal having a first  
8 step size;

9 a second digital-to-analog converter for providing a second output signal having a  
10 second step size larger than said first step size; and

11 a summation circuit coupled to said first and said second digital-to-analog  
12 converters for providing said tracking signal as a sum of said first and said second output  
13 signals.

1 2. (Previously Presented) The proximity detector of Claim 1, further including a too-far-behind  
2 comparator for providing a too-far-behind signal which changes state when said magnetic field  
3 signal varies from said tracking signal by a predetermined amount, wherein said tracking signal  
4 is controlled in response to said too-far-behind signal to include steps associated with the first  
5 step size when the too-far-behind signal is in a first state and to include larger steps associated  
6 with the second step size when the too-far-behind signal is in a second state.

1 3. (Original) The proximity detector of Claim 2, wherein said peak detector further comprises:  
2 a first counter for providing a first count signal to said first digital-to-analog converter;  
3 and

4           a second counter for providing a second count signal to said second digital-to-analog  
5 converter.

1   4. (Previously Presented) The proximity detector of Claim 3, wherein in response to the first  
2 state of said too-far-behind signal said second counter is stepped in association with a terminal  
3 count of said first counter, and in response to the second state of said too-far-behind signal said  
4 second counter is also stepped.

1   5. (Original) The proximity detector of Claim 2, wherein said too-far-behind comparator is  
2 responsive to an offset signal that differs from said magnetic field signal by an offset amount.

1   6. (Previously Presented) The proximity detector of Claim 1, further including a POSCOMP  
2 comparator for providing a POSCOMP signal, which changes state when said magnetic field  
3 signal varies from said tracking signal by a predetermined amount, wherein at least one of said  
4 tracking signal or said magnetic field signal is forced towards the other one of said tracking  
5 signal or said magnetic field signal in response to changes in state of said POSCOMP signal.

1   7. (Original) The proximity detector of Claim 6, wherein said POSCOMP comparator is  
2 responsive to a threshold signal that differs from said tracking signal by a predetermined amount.

1   8. (Original) The proximity detector of Claim 6, wherein said tracking signal is brought to  
2 substantially the same level as said magnetic field signal in response to changes in state of said  
3 POSCOMP signal.

1   9. (Original) The proximity detector of Claim 6, wherein said magnetic field signal is brought  
2 to substantially the same level as said tracking signal in response to changes in state of said  
3 POSCOMP signal.

1   10-19. Canceled